

REPORT ON BOILERS.

No. 32723

Received at London Office 25 OCT 1939

Date of writing Report

1939

When handed in at Local Office

20 OCT 1939

Port of

Sunderland.

No. in Survey held at Reg. Book.

Sunderland.

Date, First Survey

Last Survey Oct 16 1939

on the

Screw Steamer "HERMISTON"

(Number of Visits

Gross 4813 Tons Net 2765

Master

Built at

Sunderland

By whom built

Short Bros. Ltd

Yard No.

454

When built

1939.

Engines made at

Sunderland

By whom made

G. Clark (1938) Ltd

Engine No.

1214

When made

1939

Boilers made at

Sunderland

By whom made

G. Clark (1938) Ltd

Boiler No.

1214

When made

1939.

Nominal Horse Power

359.

Owners

L. Chapman & Son

Port belonging to

Newcastle.

MULTITUBULAR BOILERS - MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

The Steel Company of Scotland.

(Letter for Record

S.

Total Heating Surface of Boilers

1344 sq ft

Is forced draught fitted

No.

Coal or Oil fired

Coal.

No. and Description of Boilers

One Single Ended multitubular marine

Working Pressure

220.

Tested by hydraulic pressure to

380

Date of test

11/8/39

No. of Certificate

4296

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

34.5 sq ft

No. and Description of safety valves to each boiler

3-65"

Two "backburn" Imp. High Lift.

Area of each set of valves per boiler

(per Rule) 3.52"

(as fitted) 3.52"

Pressure to which they are adjusted

220

Are they fitted with easing gear

Yes.

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler

Smallest distance between boilers or uptakes and bunkers or woodwork

Fitted in upper recess above main blrs.

Is oil fuel carried in the double bottom under boilers

Yes

Smallest distance between shell of boiler and tank top plating

Largest internal dia. of boilers

12'-3 19/32"

Length

10'-6"

Shell plates: Material

Steel

Tensile strength

29/33.

Thickness

1 13/64"

Are the shell plates welded or flanged

No.

Description of riveting: circ. seams

end

D.R. Lap

Long. seams

T.R.D.B.S.

Diameter of rivet holes in

circ. seams

F. 1 3/16" B. 1 1/4"

long. seams

1 1/4"

Pitch of rivets

F. 3 1/16" B. 3 1/2"

8 3/8"

Percentage of strength of circ. end seams

plate

F. 65.6 B. 64.0

rivets

F. 42.4 B. 45.8

Percentage of strength of circ. intermediate seam

plate

Yes

Percentage of strength of longitudinal joint

plate

85.04

rivets

90.2.

Working pressure of shell by Rules

221.

Thickness of butt straps

outer 15/16"

inner 1 1/16"

No. and Description of Furnaces in each Boiler

Two Corrugated (Brighton).

Material

Steel

Tensile strength

26/30.

Smallest outside diameter

43 1/16"

Length of plain part

top

bottom

Thickness of plates

craven

bottom

2 1/32"

Description of longitudinal joint

Welded.

Dimensions of stiffening rings on furnace or c.c. bottom

End plates in steam space: Material

Steel

Tensile strength

26/30

Thickness

1 3/16"

Pitch of stays

18" x 16 3/4"

How are stays secured

Double nuts.

Working pressure by Rules

224.

Tube plates: Material

front

back

Steel

Tensile strength

26/30.

Thickness

1" 24/32"

Mean pitch of stay tubes in nests

11 1/4" x 8 3/4"

Pitch across wide water spaces

14 1/4"

Working pressure

front

341

back

260.

Girders to combustion chamber tops: Material

Steel

Tensile strength

29/33

Depth and thickness of girder

at centre

4 3/4" x 1 3/4"

Length as per Rule

2'-6"

Distance apart

9"

No. and pitch of stays

in each

2 @ 9 1/2"

Working pressure by Rules

225

Combustion chamber plates: Material

Steel

Tensile strength

26/30

Thickness: Sides

44/64"

Back

44/64"

Top

44/64"

Bottom

24/32"

Pitch of stays to ditto: Sides

9 1/2" x 9"

Back

9 3/8" x 9"

Top

9 1/2" x 9"

Are stays fitted with nuts or riveted over

Nuts.

Working pressure by Rules

221.

Front plate at bottom: Material

Steel

Tensile strength

26/30.

Thickness

1"

Lower back plate: Material

Steel

Tensile strength

26/30.

Thickness

1"

Pitch of stays at wide water space

15" x 9 3/8"

Are stays fitted with nuts or riveted over

Nuts.

Working Pressure

264.

Main stays: Material

Steel

Tensile strength

28/32.

Diameter

At body of stay,

2 7/8" 2 3/4"

or

Over threads

3 1/4" 3 1/8"

No. of threads per inch

6

Area supported by each stay

18" x 16 3/4" 17 3/4" x 16"

Working pressure by Rules

245 229

Screw stays: Material

Steel

Tensile strength

26/30.

Diameter

At turned off part,

1 7/8"

or

Over threads

No. of threads per inch

9

Area supported by each stay

9 1/2" x 9"

Working pressure by Rules 249. Are the stays drilled at the outer ends no. Margin stays: Diameter ^{At turned off part} 2" 2 1/4" ^{or} 2" 2 1/4" ^{Over threads} ✓

No. of threads per inch 9. Area supported by each stay 12 x 9 3/8", 12 x 12 3/16" Working pressure by Rules 220, 222.

Tubes: Material Lapwelded iron External diameter ^{Plain} 3 1/4" ^{Stay} 3 1/4" Thickness ^{4 WG.} 5/16" 3/8" No. of threads per inch 9.

Pitch of tubes 4 1/2" x 4 3/8" Working pressure by Rules 286 255 230 Manhole compensation: Size of opening in shell plate 16" x 12" Section of compensating ring 8 1/2" x 1 3/4" No. of rivets and diameter of rivet holes 32 @ 1 1/4"

Outer row rivet pitch at ends 8 3/8" Depth of flange if manhole flanged ✓ Steam Dome: Material ✓

Tensile strength ✓ Thickness of shell ✓ Description of longitudinal joint ✓

Diameter of rivet holes ✓ Pitch of rivets ✓ Percentage of strength of joint ^{Plate} ✓ ^{Rivets} ✓

Internal diameter ✓ Working pressure by Rules ✓ Thickness of crown ✓ No. and diameter of stays ✓

How connected to shell ✓ Inner radius of crown ✓ Working pressure by Rules ✓

Size of doubling plate under dome ✓ Diameter of rivet holes and pitch of rivets in outer row in dome connection to shell ✓

Type of Superheater none Manufacturers of ^{Tubes} ✓ ^{Steel castings} ✓

Number of elements ✓ Material of tubes ✓ Internal diameter and thickness of tubes ✓

Material of headers ✓ Tensile strength ✓ Thickness ✓ Can the superheater be shut off and the boiler be worked separately ✓

Is a safety valve fitted to every part of the superheater which can be shut off from the boiler ✓

Area of each safety valve ✓ Are the safety valves fitted with casing gear ✓ Working pressure as per Rules ✓

Pressure to which the safety valves are adjusted ✓ Hydraulic test pressure: tubes ✓, castings ✓ and after assembly in place ✓ Are drain cocks or valves fitted to free the superheater from water where necessary ✓

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with Yes.

The foregoing is a correct description,
GEORGE CLARK (1938) LTD. Manufacturer.

Arthur J. Berg

Dates of Survey ^{During progress of work in shops - - -} Please see Mech. Rpt. Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)

^{while building} ^{During erection on board vessel - - -} Total No. of visits

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)

This boiler has been constructed under Special Survey in accordance with the approved plan & the rules of the Society.

The materials & workmanship are good.

On completion the boiler has been tested by hydraulic pressure of 380 lbf/sq. in & found tight & sound.

It has been securely fixed on board the vessel, examined under steam & safety valves adjusted to working pressure in accordance with rule requirements.

In recommendation please see Mech. Rpt.

Survey Fee ... £ See Mech. Rpt. When applied for, 192

Travelling Expenses (if any) £ Rpt. When received, 192

W. J. Lasow
 Engineer Surveyor to Lloyd's Register of Shipping.

TUE 31 OCT 1939

Committee's Minute

Assigned See Mech. Rpt.

Rpt. 13.

Date of writing

No. in Reg. B 39363

Built at

Owners

Electrical

Is vessel

Have plans

Heating

has the gov

trip switch

if not com

arranged to

test for ma

of the gene

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contact

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are they in

and oil

material is

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Is the const

to pilot and

side of switc

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ammeters

equaliser con